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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/762,585	02/09/2001	Colin Leslie Young	032642-004	5719

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[REDACTED] EXAMINER

PAK, JOHN D

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

1616

DATE MAILED: 04/28/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No. 09/762,585	Applicant(s) Young
Examiner John Pak	Art Unit 1616

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on Feb 5, 2003

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) Claim(s) 55-96 is/are pending in the application.

4a) Of the above, claim(s) 96 is/are withdrawn from consideration.

5) Claim(s) _____ is/are allowed.

6) Claim(s) 55-88 and 92-95 is/are rejected.

7) Claim(s) 89-91 is/are objected to.

8) Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on _____ is/are a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on _____ is: a) approved b) disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. _____.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCI Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) Notice of References Cited (PTO-892)

4) Interview Summary (PTO-413) Paper No(s). _____

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____

6) Other: _____

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Claims 55-96 are pending in this application. Claim 96 stands withdrawn as being directed to non-elected subject matter.

The following is a quotation of the first paragraph of 35 USC 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 55-75 stand rejected under 35 USC 112, first paragraph, as lacking in adequate enabling support for the reasons of record.

Applicant's arguments relative hereto have been given due consideration but they were deemed unpersuasive. The claimed invention is directed to repelling molluscs with a substantially insoluble metal oxalate. Calcium oxalate is one such oxalate. The Examiner has provided evidence that shows two species of molluscs to thrive in substrates treated with calcium oxalate. The Examiner concluded that given an effect that is opposite to the claimed effect, one skilled in the art would not be able to practice the invention commensurate in scope with the claims.

Applicant argues in Paper No. 9 (2/5/03) that mere presence of inoperative embodiments does not necessarily render the claims non-enabled. Applicant argues that the question is whether the skilled artisan can determine which embodiments would be inoperative or operative without undue experimentation (Paper No. 9, page 4). Applicant states that there are a limited number of insoluble metal oxalates and the specification provides examples of determining

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repellency/toxicity to molluscs; therefore, applicant argues, the skilled artisan would be able to readily determine whether a particular metal oxalate is inoperative.

The Examiner cannot agree with applicant's arguments and position. Applicant neglects to mention just how broadly the claims are drawn. Independent claim 55 reads on treating any substrate for repelling any mollusc. The phylum Mollusca is the second largest phylum of invertebrates, second only to phylum Insecta. There are a lot of different mollusc species of significance, to say the least. Against this background, applicant has tested only juvenile *Helix aspersa* (copper oxalate), *Deroceras reticulatum* (copper oxalate and ferric potassium oxalate) and *Cernuella virgata* (copper oxalate), all of which are common land species of the class Gastropoda. What about the mussels of the class Bivalvia, squid and cuttlefish of class Cephalopoda and many other different species? Many such species are significantly different (e.g. live in water) and cannot be expected to behave similarly to land snails and slugs.

Even amongst land inhabiting mollusc species, it has been shown by the Examiner's evidence that calcium oxalate has an effect that is opposite from the one intended by applicant's invention. Therefore, how could one skilled in the art accept that inventive oxalates would be expected to have repelling effect against molluscs in general, including those in classes Bivalva, Cephalopoda and Scaphopoda, not to mention divergent species with the class Gastropoda.

While applicant argues that the specification shows how to determine repellency and that the number of substantially insoluble metal oxalates is limited, it is the Examiner's position that given the broad scope of mollusc repellency without any limitation on the mollusc species, the

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skilled artisan would be faced with undue experimentation. There appears to be little predictability even with respect to land molluscs. For economically significant aquatic species such as zebra mussels and others, there would have to be substantial experimentation both in vitro and under use-conditions, wherein the economic effect of having an opposite effect to repellency would be devastating. To say that there is a method to determining whether or not the intended effect is obtained is but a truism. When the target effect is observable, there is always a method to determine success/failure. However, in this instance, there appears to be significant unpredictability and uncertainty as to whether oxalates other than those tested would be effective against other specific molluscs. To individually test every single inventive oxalate for every single member from the great number of divergent mollusc species, wherein the consequence of making such mollusc species thrive instead of be repelled would be unacceptable, amounts to undue experimentation under the facts of this case.

For these reasons, this ground of rejection must be maintained.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 55-60, 71-72, 74-81 and 92-94 stand rejected under 35 USC 102(b) as anticipated, or in the alternative, under 35 USC 103(a) as obvious over Ikari et al. (EP 485213) for the reasons of record.

Applicant's arguments relative hereto have been given due consideration but they were deemed unpersuasive. Applicant argues that the copper compound is an optional feature in Ikari et al. This is a clearly erroneous interpretation of Ikari et al.. Ikari's claim 2 specifically requires a copper compound, and claim 10, which depends on claim 2, recites copper oxalate. Similarly, applicant argues that the advantage of the present invention is that the insoluble metal oxalate can be used on its own without the presence of triazole and dithiocarbamic acid compounds. However, the claims are not so limited. The claims must be given their broadest reasonable interpretation when being examined. Here, the broadest reasonable interpretation of the claims do not exclude triazoles and dithiocarbamic acids, particularly when use of other active agents are clearly contemplated (see e.g. claims 64, 68, 71). See also the open "composition comprising" language in independent claims 55 and 76.

Applicant argues further that "there is no evidence or suggestion that the copper compound, such as copper oxalate, plays an active role or is essential for the purpose of antifouling." Applicant does not mention that applicant's claims do not exclude other active

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agents. Applicant's claims are readable on Ikari's triazoles. As to "active role" of copper compound such as copper oxalate for the purpose of antifouling, the Examiner's position is that the amount of copper oxalate that is utilized in applicant's invention ("effective amount" or more specifically about 2-100 wt%) clearly and substantially overlaps with Ikari's amount (up to 60 wt%, preferably 1-50 wt%, see claim 11); therefore, the effect that applicant claims for copper oxalate must necessarily be present in Ikari's copper oxalate containing composition and method.

For these reasons, applicant's arguments are unpersuasive and this ground of rejection must be maintained.

Claims 55-67, 71-72, 74-88, and 92-95 are rejected under 35 USC 103(a) as being unpatentable over Ikari et al. for the reasons of record.

Applicant's arguments relative hereto have been given due consideration but they were deemed unpersuasive. Applicant relies on the argument made in response to the previous ground of rejection for Ikari's supposed failure to disclose an effective amount of the substantially insoluble copper oxalate. However, as explained above, the amount of copper oxalate that is utilized in applicant's invention ("effective amount" or more specifically about 2-100 wt%) clearly and substantially overlaps with Ikari's amount (up to 60 wt%, preferably 1-50 wt%, see claim 11); therefore, the effect that applicant claims for copper oxalate must necessarily be present in Ikari's copper oxalate-containing composition and method.

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Applicant argues also that with respect to claims 62, 63, 83 and 84, which claim a binder, Ikari et al. do not disclose or suggest the invention. Applicant ignores Ikari's teaching to including additives such as conventional paints, extenders, suspending agents, anti-dripping agents (p. 5, lines 29-31), resins such as epoxy type resins and conventional coating materials for substrates such as ship bottoms (p. 5, lines 37-41 & 50-53). Surely, even though the term "binder" is not specifically used, the effect of a binder is clearly suggested and encompassed.

For these reasons, applicant's arguments are unpersuasive and this ground of rejection must be maintained.

Claims 89-91 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims, pending a search update at the time of the Notice of Allowance, when and if appropriate.

THIS ACTION IS MADE FINAL. See MPEP 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event of a first reply is filed with TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

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will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

A facsimile center has been established in Technology Center 1600. The hours of operation are Monday through Friday, 8:45 AM to 4:45 PM. The telecopier numbers for accessing the facsimile machines are (703) 308-4556 or (703) 305-3592.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Examiner Pak whose telephone number is (703) 308-4538. The Examiner can normally be reached on Monday through Friday from 8 AM to 4:30 PM. The Examiner can also be reached on alternate Fridays. If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's Supervisor, Mr. José Dees, can be reached on (703) 308-4628. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-1235.



JOHN PAK
PRIMARY EXAMINER
GROUP 1600